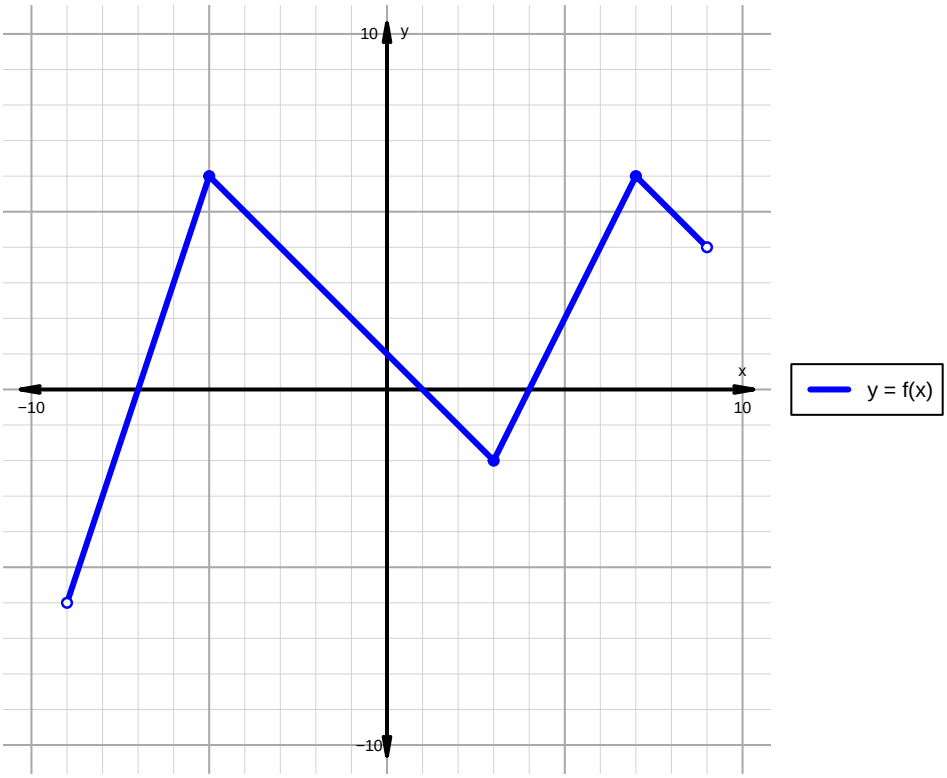
Name: Date:

Intervals, Transformations, and Slope Solution (version 108)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7, 1) \cup (4, 9)$
Negative	$(-9, -7) \cup (1, 4)$
Increasing	$(-9, -5) \cup (3, 7)$
Decreasing	$(-5, 3) \cup (7, 9)$
Domain	$(-9, 9)$
Range	$(-6, 6)$

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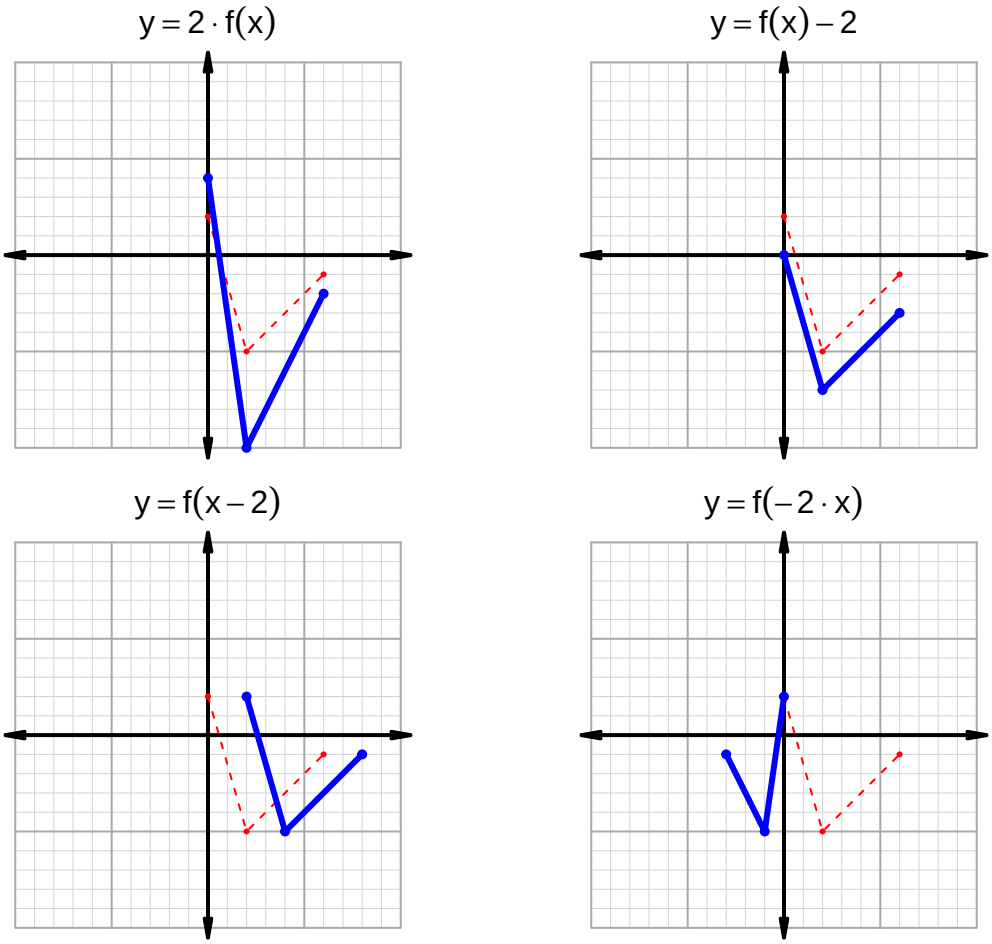
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 64$ and $x_2 = 99$. Express your answer as a reduced fraction.

x	$g(x)$
25	64
53	99
64	53
99	25

$\frac{f(99)-f(64)}{99-64} = \frac{25-53}{99-64} = \frac{-28}{35}$

The greatest common factor of -28 and 35 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-4}{5}$$